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NORTHEASTERN FOREST PEST REPORTER

United States Department of Agriculture
Forest Service Region Seven

U. S. DEPT. OF AGRICULTURE
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FOREWORD

This issue of the Northeastern Forest Pest Reporter summarizes available information on forest insect and disease conditions as they were known last fall and will probably appear this spring. Hence, its value lies more in providing a background from which to work rather than as an annual report. It will be useful as a base from which to expand and improve observations in 1963.

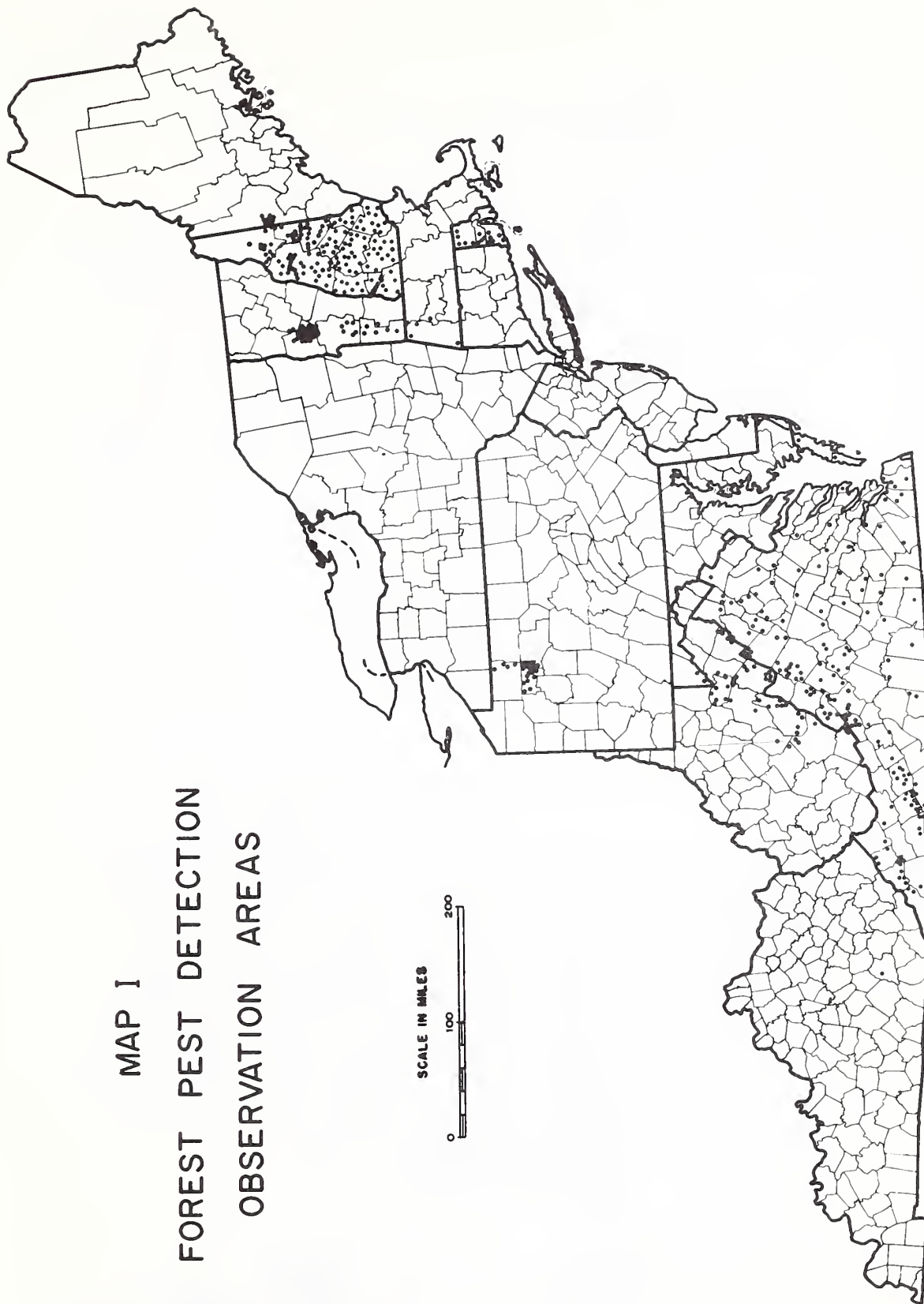
The Detection Program

A detection system, using a series of observation areas to determine distribution and trends of the more important forest insects was started in 1962. Observation areas were established on the National Forests and in New Hampshire, Rhode Island and Virginia. Since trends are not readily discernible from one year's observation, this feature of the detection program must necessarily be hazy until a basis of annual comparison is established. The introduction of the observation area system has nevertheless proved beneficial in many ways. It provided a means of reaching foresters with a specific plan of action, stimulating their interest, and obtaining their cooperation in reporting abnormal insect and disease situations.

The black dots on Map 1 represent established observation areas.

Information on distribution and trends of critical insects on succeeding maps and pages was obtained from all available sources - observation areas, surveillance reports, general observations, etc. Most of the information was provided by our cooperators to whom we again express our sincere thanks. That the information on distribution and trends of the various pests is incomplete is readily apparent when one studies the maps. It is known for a fact that pests do not respect State boundaries, even though some of the maps would so indicate. The apparent weakness in our present reporting system lies in a lack of uniformity in assessing infestations; not all observers regard the same pest species in the same way. This will be remedied as better standards are developed and closer coordination is attained. In the meantime, this issue serves to impart a region-wide picture of conditions reported in 1962.

MAP I
FOREST PEST DETECTION
OBSERVATION AREAS



STATUS OF FOREST INSECTS

SPRUCE BUDWORM (Choristoneura fumiferana)

Maine

Epidemic populations of the spruce budworm continue to occur in northeastern Aroostook County, Maine. Approximately 450,000 acres of spruce-fir were heavily defoliated in 1962 with some top kill and tree mortality evident. Egg mass surveys in 1962 indicate an even greater budworm population in 1963 which could cause serious damage to the already weakened spruce-fir stands if left unchecked. In view of the seriousness of this infestation plans are being formulated to aerially treat 470,000 acres with DDT in 1963. This will be a cooperative project conducted by the State of Maine and financed with private, state and federal funds. (Map II)

Recent laboratory studies have suggested that commercially prepared Bacillus thuringiensis, a microbial insecticide, may hold promise for large scale control of the spruce budworm. In order to test this material under field conditions a pilot test study will be carried out in June, 1963, in northern Maine.

FOREST TENT CATERPILLAR (Malacosoma disstria)

Maine
New Hampshire
Pennsylvania
Kentucky

Forest tent caterpillar populations remained at a low level in 1962. However, a slight increase in numbers was noted in northern Washington County, Maine and throughout most of Kentucky; while New Hampshire showed a general decline. Heavy parasitism by the dipterous parasite, Sarcophaga aldrichi, in the southern counties of Pennsylvania should continue to hold caterpillar populations at the present low level. Tree mortality of red, scarlet and black oaks that survived the 1958-1960 outbreak in the south central counties of Pennsylvania is now evident. Scarlet oak is especially hard hit and is now commonly under attack by the two-lined chestnut borer, Agrilus bilineatus. (Map III)

MAP II
 SPRUCE BUDWORM
 (CHORISTONEURA FUMIFERANA)

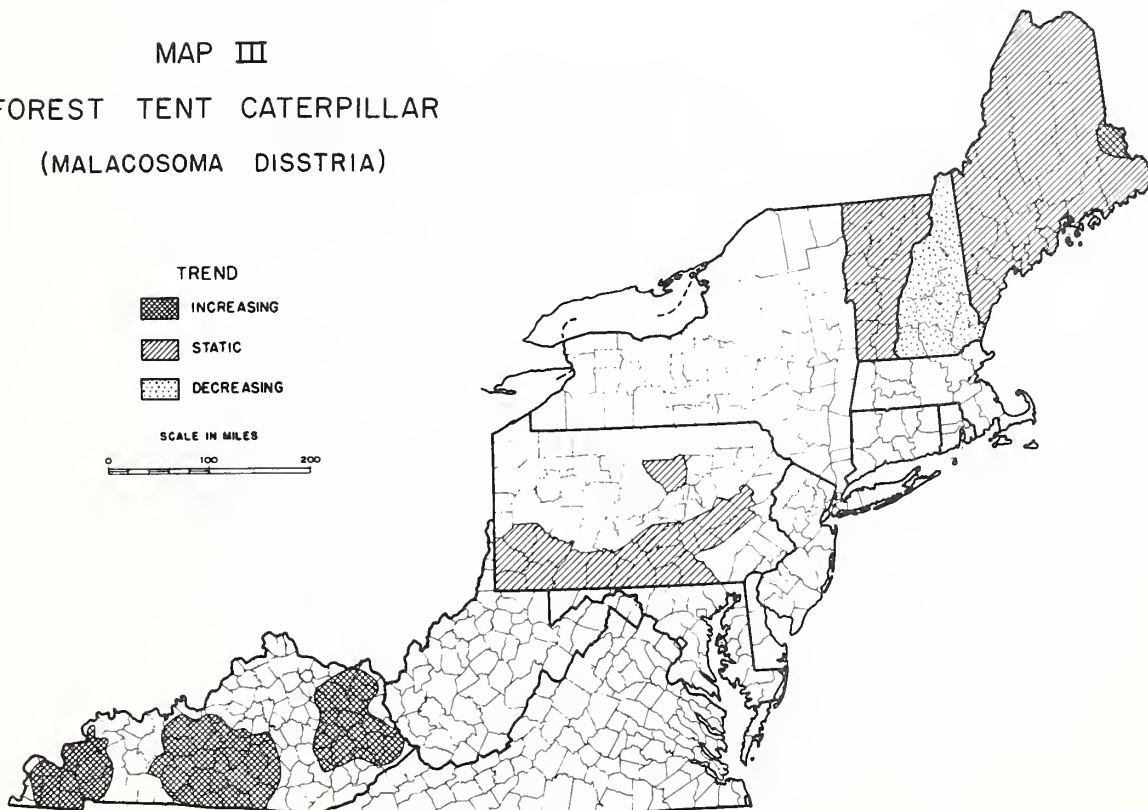
TREND
 INCREASING
 STATIC
 DECREASING



MAP III
 FOREST TENT CATERPILLAR
 (MALACOSOMA DISSTRIA)

TREND
 INCREASING
 STATIC
 DECREASING

SCALE IN MILES
 0 100 200



RED PINE SCALE (Matsucoccus resinosae)




The red pine scale continues as one of the most serious threats in this region to red pine. The absence of an effective and economical control method has permitted the slow but continued spread of this pest. Currently the destruction of all host trees within an infested area has been the only solution to this problem. However, the problems involved in such a drastic method has restricted its use to localized areas. (Map IV)

- Connecticut The scale is now fairly well distributed throughout southern Fairfield County and some of the adjacent towns in New Haven County, Connecticut. Of special interest in the Connecticut infestation is that it is now reported to be at an all time low. It is believed that the cold winter of 1961-1962 was a key factor in this decline in scale populations.
- New York The 1962 survey showed that the scale had spread 2 1/2 miles northward in Westchester County since 1960. Infested red pines were found southwest of the Kensico reservoir. Sanitation operations by New York Water Supply personnel has been directed toward the removal of all infested trees at this location.
- New Jersey In New Jersey scale infested red pines were found in Passaic and Bergen Counties. However, drastic action involving the cutting and destruction of all infested trees and stands has eliminated these infestations. Special surveys by state personnel are continuing. Prompt action will be taken to eliminate newly found infestations.

WHITE PINE WEEVIL (Pissodes strobi)




White pine weevil conditions in the region have changed little from those given in the Northeastern Forest Pest Reporter No. 2, 1962. However, the impact of this pest on the forest resources of the region requires that a high degree of surveillance be maintained of valuable pine stands and suppression measure be undertaken when their economic values are threatened. (Map V)


MAP IV
RED PINE SCALE
(MATSUCOCCUS RESINOSAE)

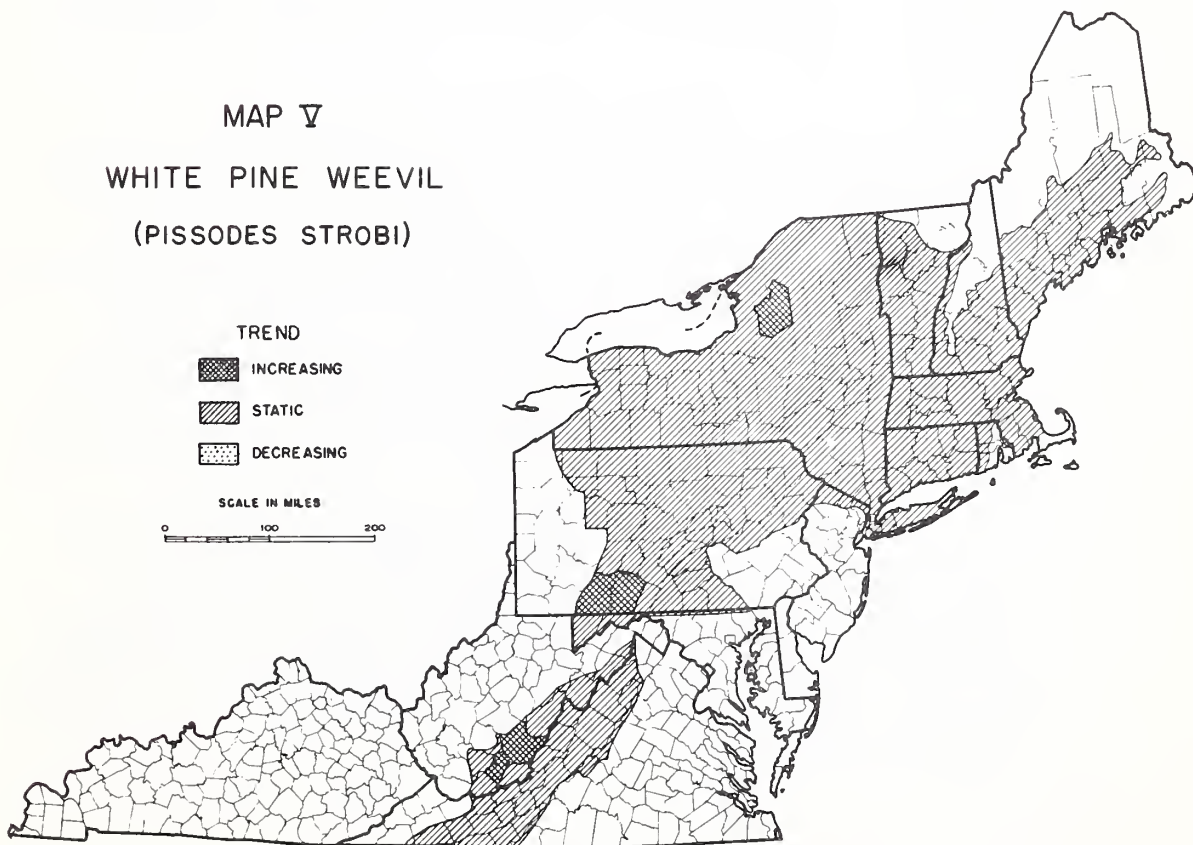
TREND
 INCREASING
 STATIC
 DECREASING



MAP V
WHITE PINE WEEVIL
(PISSODES STROBI)

TREND
 INCREASING
 STATIC
 DECREASING

SCALE IN MILES




SADDLED PROMINENT (Heterocampa guttivitta)

Massachusetts A build up of the saddled prominent in northwestern Massachusetts, resulted in 500 acres of heavy defoliation of northern hardwoods on the Mohawk Trail State Forest. A smaller, localized outbreak was also reported in the town of Becket.

Systematic sampling for overwintering pupae revealed a very low population with evidence of extensive predation by rodents. This factor, coupled with the longevity history of past infestations may indicate a sharp reduction in saddled prominent populations for 1963.

No other reports of saddled prominent activity in the region were received.

PINE LEAF APHID (Pineus pinifoliae)

Maine Damage by this forest pest is currently noticeable only in the
New Hampshire northern half of the region. Conditions in Maine and New
Vermont Hampshire remain as severe as previously reported. A general
New York decline was reported from Vermont and New York. (Map VI)

PINE LOOPER (Lambdina athasaria pellucidaria)

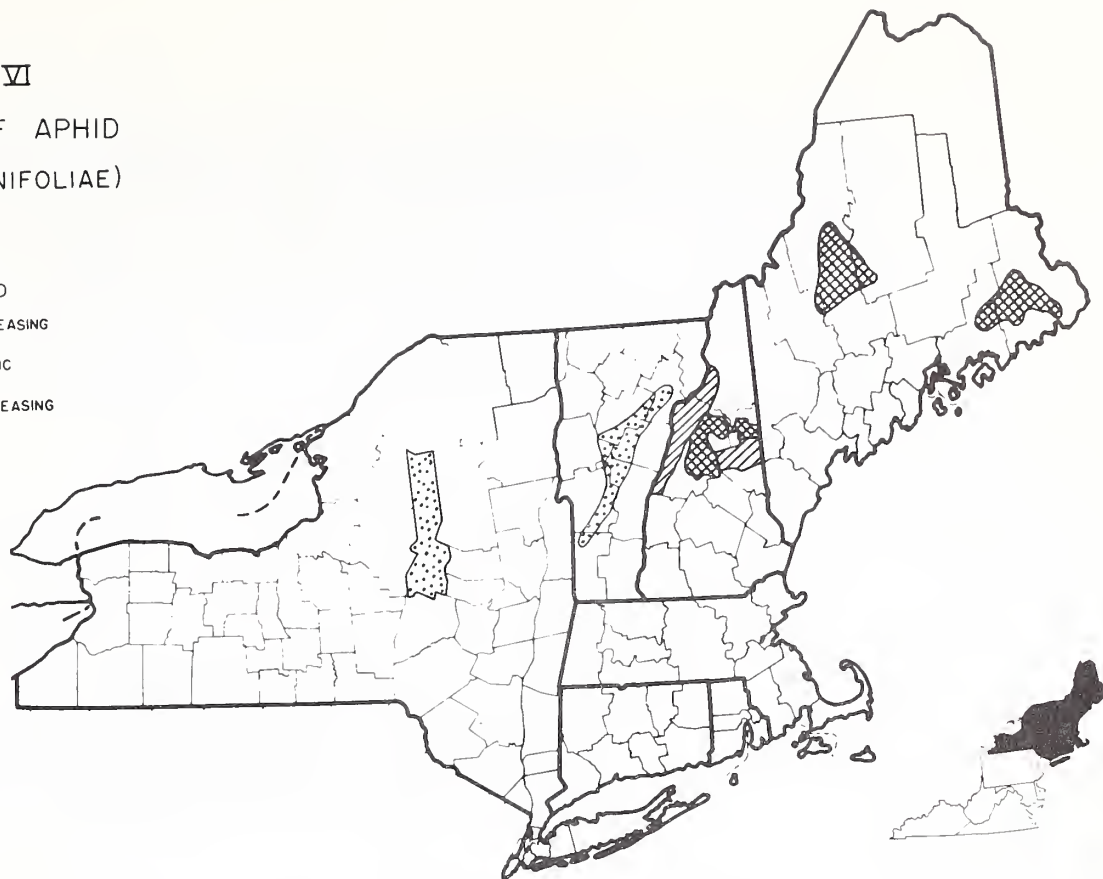
Massachusetts The pine looper is currently restricted to Cape Cod in eastern Massachusetts. An aerial survey conducted in October (1962) revealed extensive defoliation of Pitch Pine throughout the mid-Cape area, with particularly heavy feeding north of Provincetown, in Pilgrim Springs State Park, near Eastham, Dennis, and Hyannis. Lighter defoliation was noted near West Falmouth. These observations indicate an increase in looper population in both degree of defoliation and distribution over that observed in 1961. (Map VII)

A survey for overwintering pupae was undertaken during late November to provide a tentative index of 1963 population level. Preliminary analysis of these data suggest a rise in looper population in the mid-Cape area, particularly south of Dennis, with a general decline expected in the Provincetown-Truro area for 1963. The status of the light infestation near West Falmouth was not determined.

MAP VI




PINE LEAF APHID (PINEUS PINIFOLIAE)

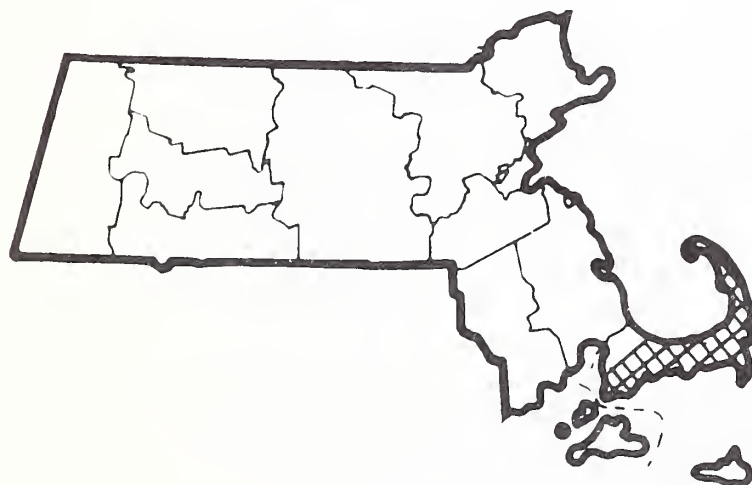
TREND
 INCREASING
 STATIC
 DECREASING



MAP VII

PINE LOOPER (LAMBDA ATHASARIA PELLUCIDARIA)

TREND
 INCREASING
 STATIC
 DECREASING



A small scale pilot test with a mistblower using a commercial preparation of Bacillus thuringiensis was carried out in 1962, but the results were erratic and inconclusive. However, the high degree of kill obtained under laboratory condition warrants further testing. A similar test using a B.t. emulsifiable concentrate applied by helicopter is planned for 1963. It is believed that with this new formulation many of the problems encountered during the 1962 tests will be eliminated.

RED-HEADED PINE SAWFLY (Neodiprion lecontei)

| | |
|---------------|--|
| New Hampshire | The red-headed pine sawfly, a defoliator of young hard pines, is currently at a low population level throughout most of the region. In New Hampshire the insect was found widely distributed on red pine throughout the lower elevations, but no significant build up was reported. In Vermont and Rhode Island minor infestations were noted in several localized areas in each state. A general population decline has occurred in upper New York, New Jersey, and West Virginia. (Map VIII) |
| Vermont | |
| Rhode Island | |
| New York | |
| New Jersey | |
| West Virginia | |
| Pennsylvania | In west-central and central Pennsylvania and in Virginia the general population trend is static. However, small localized heavy infestations occurred in some of the west-central counties of Pennsylvania in jack, red and scotch pine plantations. Kentucky reports a general state-wide increase. |
| Virginia | |
| Kentucky | |

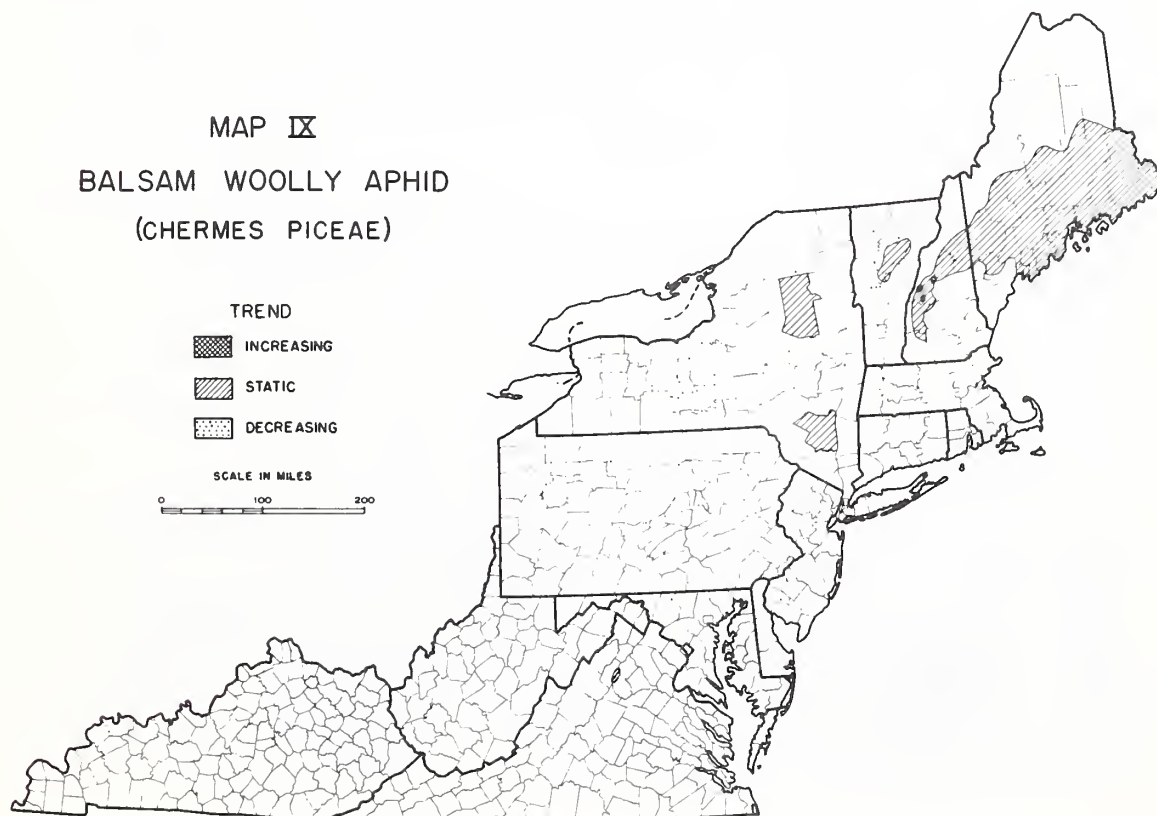
BALSAM WOOLLY APHID (Chermes piceae)

| | |
|---------------|---|
| Maine | Population of the balsam woolly aphid, with the exception of scattered localized areas remained static in Maine, New Hampshire and Vermont in 1962. The imported predaceous beetle, <u>Laricobius erichsonii</u> , is now successfully established in several aphid infestations in these States. Although specific data is not available indicating the effectiveness of the predator, it is known that aphid populations have declined in all release areas in Vermont, where checks have been made. (Map IX) |
| New Hampshire | |
| Vermont | |
| Virginia | This insect was found infesting Fraser fir in the Shenandoah National Park, Virginia. Practically all firs in the area are infested. Damage is limited to gout, and a few trees are dying annually. |

MAP VIII
RED-HEADED PINE SAWFLY
(NEODIPRION LECONTEI)



MAP IX
BALSAM WOOLLY APHID
(CHERMES PICEAE)



PINE TIP MOTH COMPLEX

Nantucket Pine Tip Moth (Rhyacionia frustrana)
Pitch Pine Tip Moth (R. rigidana)

Extensive injury by a complex of tip moths occur throughout the southern half of the Region. Both species of Rhyacionia may be found within the same infestation and on the same host species. Similarity in damage and larvae make it difficult to separate these species. For this report R. frustrana will be considered the predominant species, recognizing, of course, that R. rigidana may in some localities predominate.

New Jersey
Maryland
Pennsylvania

New Jersey and Maryland reports static state-wide infestations of the tip moth with the heaviest damage on the poorer growing sites. In Pennsylvania tip moth injury was light to moderate in plantations of Scotch, Austrian and red pines in the southeastern corner of the State. Damage to planted Virginia pine was so severe in 1962 after three years of attack, that this tree species is now not recommended for planting. (Map X)

Virginia

In Virginia the tip moth continued as a perennial pest of loblolly and other pines. The insect is common over the entire State, but is more abundant in the Piedmont. With the exception of seed orchards, cost of suppression is generally too high to warrant action. Planting on good sites is recommended as a means of reducing damage.

West Virginia
Kentucky

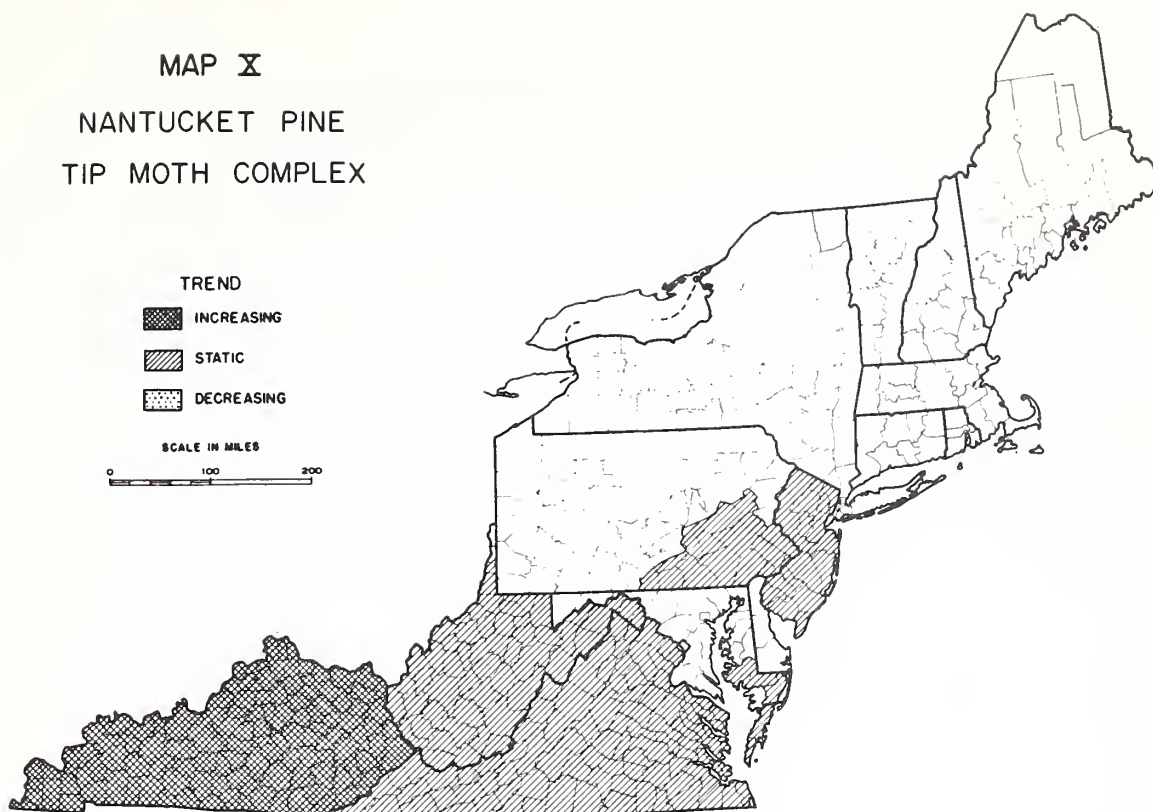
The tip moth is widely distributed in West Virginia and Kentucky with an increase in activity reported from Kentucky.

VIRGINIA PINE SAWFLY (Neodiprion pratti pratti)

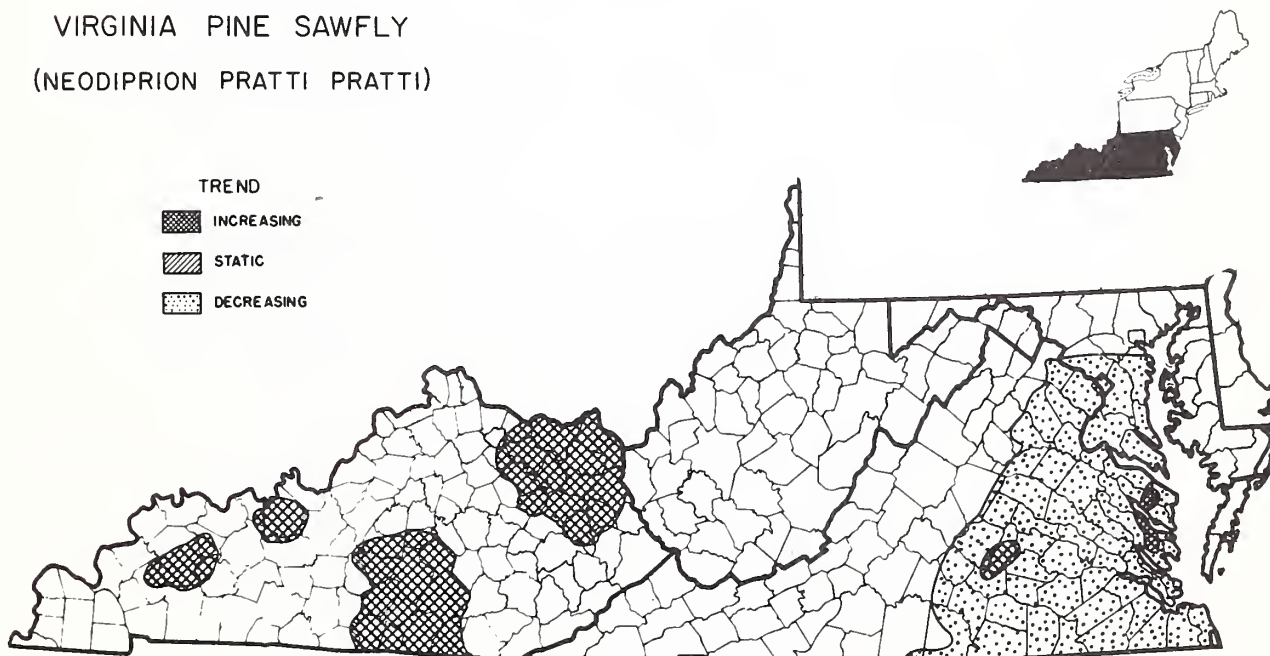
Virginia
Maryland
Kentucky

The Virginia pine sawfly continues as a forest pest in Maryland, Virginia, and Kentucky. The intensity of defoliation in Maryland and Virginia dropped to a very low level in 1962, and the acreage defoliated was the lowest recorded in several years. In Virginia an egg survey was carried out in 1962 in addition to the aerial defoliation survey. Eggs were found generally scattered over the eastern portion of the State. A special report covering these surveys is available from the Forest Pest Control Southern Zone office, Harrisonburg, Virginia. Kentucky reports this sawfly on the increase in 1962. (Map XI)

MAP X
NANTUCKET PINE
TIP MOTH COMPLEX



MAP XI
VIRGINIA PINE SAWFLY
(NEODIPRION PRATTI PRATTI)



SOUTHERN PINE BEETLE (Dendroctonus frontalis)

Virginia A flare-up of southern pine beetle in Virginia resulted in severe infestations scattered over a seven county area, (Buckingham, Charlotte, Cumberland, Fluvanna, Goochland, Powhatan and Prince Edward) in the central part of the State. The beetle killed 1,200 acres of mature and overmature hard pine in infestations that ranged from less than 1 to as high as 70 (average 3) acres in size. In the counties surrounding and south of the known epidemic areas, small scattered infestations were found. On the Eastern Shore the beetle's activity in older infestations was relatively limited. (Map XII)

In the epidemic area an effective salvage program was put into operation to reduce monetary losses and to reduce beetle populations. A program of aerial surveys followed by quick ground checks and landowner contacts will be continued by the State in 1963.

Maryland In Maryland the infestations on the Eastern Shore - in Somerset, Wicomico and Worchester Counties - were reported static.

West Virginia West Virginia reported the southern pine beetle to be no
Kentucky problem in 1962. There it is felt that conditions conducive to outbreaks are generally lacking at present; pine plantations are young, and mature and overmature hard pine are not abundant. Kentucky reported little activity in some eastern and southeastern counties, adding that six to eight years have passed since the last outbreak.

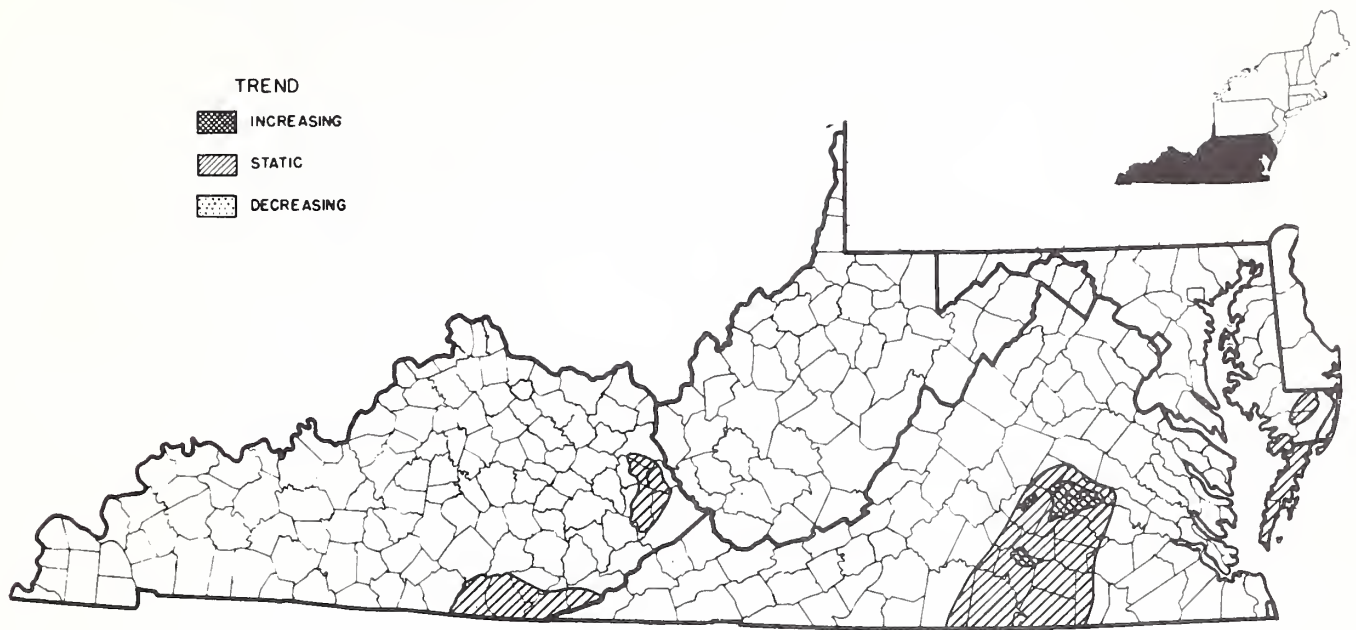
EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana)

Maine The European pine shoot moth was found at several scattered locations along the coast in Cumberland County, Maine. These infestations are small and static in activity. (Map XIII)

New Hampshire In New Hampshire a new infestation was reported from Austrian
New York pine in southeastern Merrimack County, and in eastern Rockingham County a red pine plantation has been severely injured. Although shoot moth infestations are extensive throughout New York the status of the insect did not change in 1962.

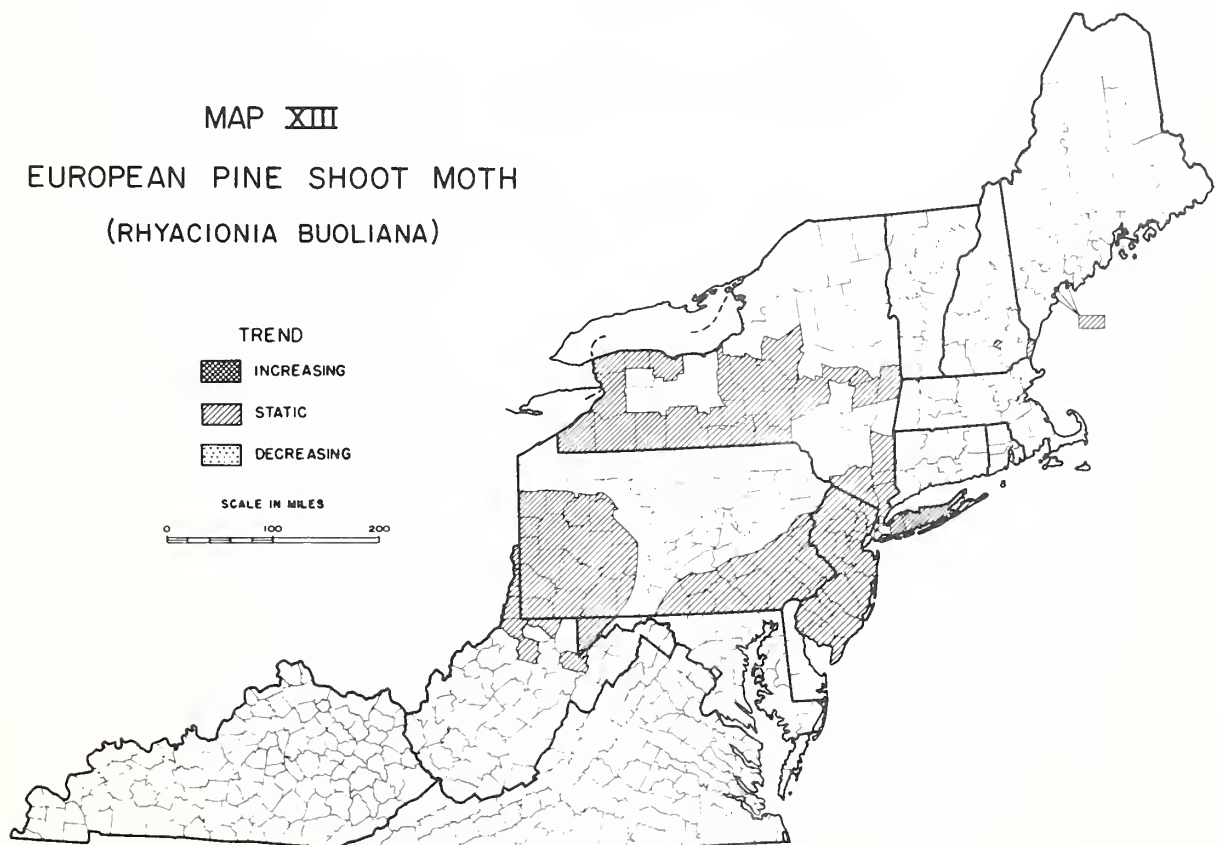
MAP XII

SOUTHERN PINE BEETLE (DENDROCTONUS FRONTALIS)



MAP XIII

EUROPEAN PINE SHOOT MOTH (RHYACIONIA BUOLIANA)



| | |
|----------------------------------|--|
| New Jersey | The insect was present throughout New Jersey, with damage scattered and light to moderate. The degree of infestation was unchanged. |
| Pennsylvania West Virginia | In Pennsylvania shoot moth injury was reported severe on red pine wherever planted in the southern part of the State. Austrian and Scotch pines were also attacked. Planting pine in that part of the State is discouraged. Shoot moth injury in West Virginia was considered a problem in the northwestern counties. It was reported heavy in the New Martinsville area of Wetzel County. |
| Maryland Virginia Kentucky | In Maryland infestations in Garrett County were reported static. The insect has not been reported from Virginia or Kentucky. |

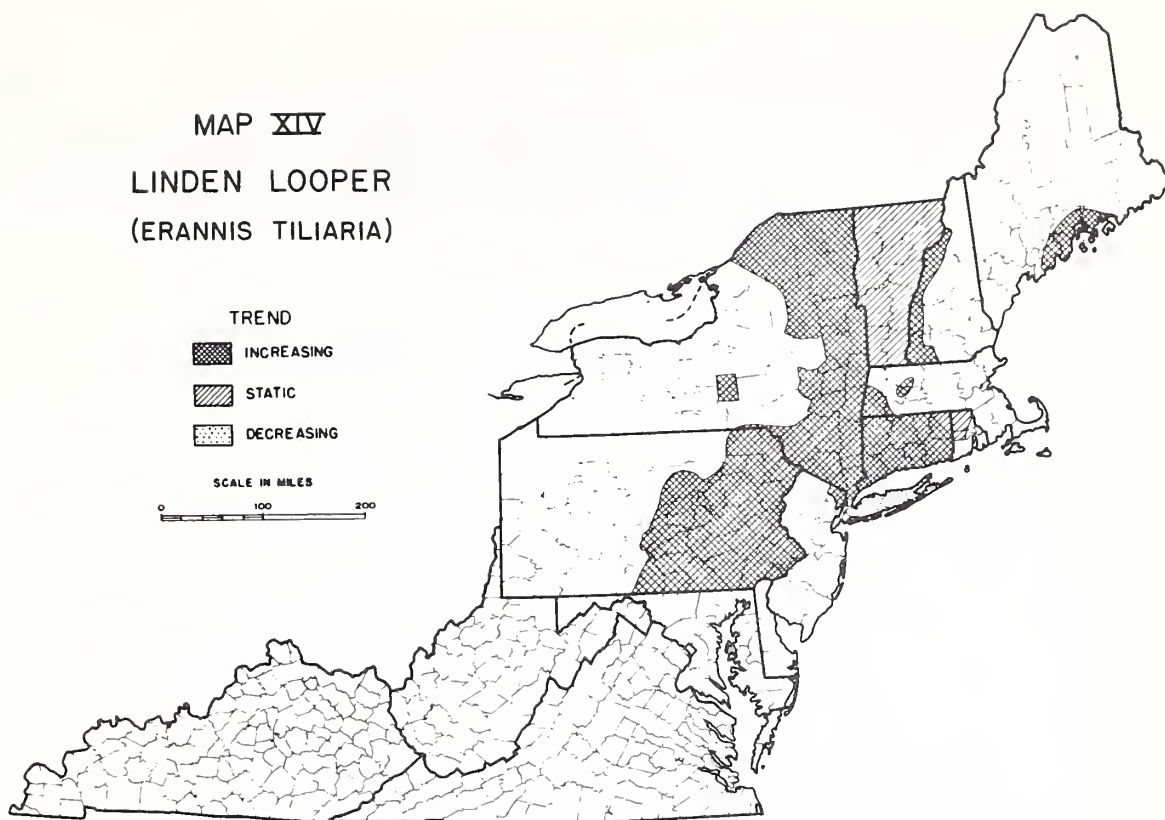
LINDEN LOOPER (Erannis tiliaria)

| | |
|---|---|
| New England New York Pennsylvania Virginia | Increases in linden looper populations were reported from Maine to Pennsylvania. These increases were especially noticeable throughout the Connecticut River Valley in New Hampshire, western Massachusetts, most of Connecticut, eastern New York and eastern Pennsylvania to Virginia. Throughout the rest of the area, populations remain static except on Long Island where a decrease was noted. (Map XIV) |
| New Hampshire Pennsylvania New Jersey | A high parasitism by an undetermined hymenopterous parasite was reported from the Connecticut River Valley infestation. In Pennsylvania defoliation up to 80% of red and scarlet oaks was observed in the eastern part of the State. This was the third consecutive year of heavy defoliation in that area. Defoliation this year is expected to be more prevalent in the north-central counties. Heavy defoliation was also reported from Bergen County, New Jersey. |

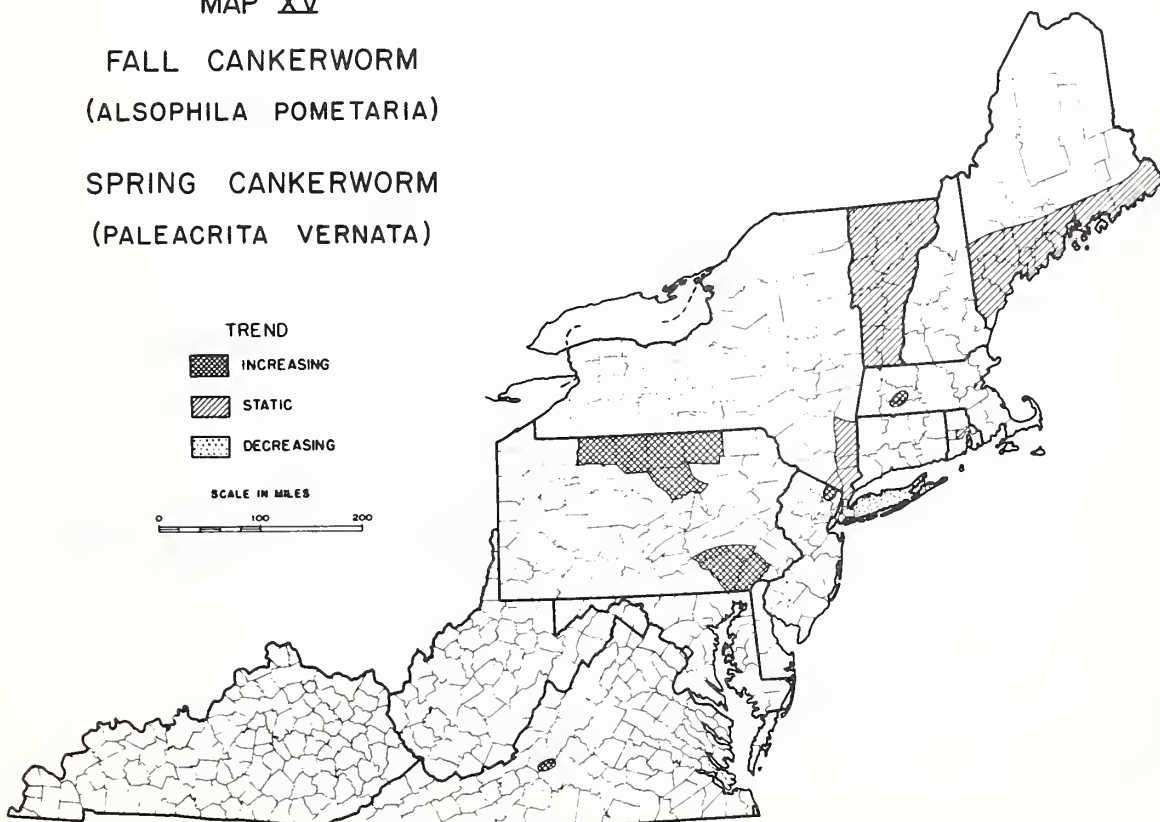
FALL CANKERWORM (Alsophila pometaria) SPRING CANKERWORM (Paleacrita vernata)

These two forest pests, because they commonly occur about the same time and in the same stands, will be discussed jointly as well as portrayed together on the same map. (Map XV)

MAP XIV
LINDEN LOOPER
(ERANNIS TILIARIA)



MAP XV
FALL CANKERWORM
(ALSOPHILA POMETARIA)
SPRING CANKERWORM
(PALEACRITA VERNATA)



New England
New York The status of the two cankerworms did not change materially throughout New England and New York, with the exception of Long Island where populations of the spring cankerworm are on the decrease.

Massachusetts In Massachusetts a total of 2500 acres were sprayed in 1962, for control of the fall cankerworm. Indications are that populations outside the sprayed area may increase this year.

New Jersey
Pennsylvania An increase of spring and fall cankerworm damage occurred in Bergen County, New Jersey in 1962. Pennsylvania reported an increase in the number and severity of infestations in the north-central and southeastern parts of the State. These infestations included other geometrids mixed with the spring and fall cankerworm populations. Defoliation ranged from light in the northern counties to heavy in the southeast.

Virginia
Maryland
West Virginia
Delaware
Kentucky In Bedford and Botetourt Counties of Virginia an infestation of the fall cankerworm severely defoliated approximately 950 acres. Populations of these insects remained low and negligible in the rest of the State. Kentucky, Maryland, West Virginia and Delaware, although having the insects present, have no serious problems.

EUROPEAN PINE SAWFLY (Neodiprion sertifer)

New York
New Jersey
Pennsylvania Decreasing populations of this insect pest were reported from New York, New Jersey and Pennsylvania. During 1962 heavy defoliation of red and Scotch pine plantations in Herkimer County, New York, and to Scotch pine in some of the southeastern counties of Pennsylvania, were noted. A virus insecticide specific to this insect has been used successfully in its control.

FALL WEBWORM (Hyphantria cunea)

This insect was reported as common throughout the southern half of the Region. Population and damage increased in 1962.

Pennsylvania
New Jersey
Maryland
Virginia
West Virginia
Kentucky

In Pennsylvania heaviest damage was in the western third of the State, in York County, and along the Delaware River in the east. The insect was common and heavy in New Jersey. Maryland had high populations. In Virginia infestations were common state-wide and many were heavy. To preserve scenic beauty, suppression of roadside infestations was carried out by the National Park Service along the Blue Ridge Parkway and in the Shenandoah National Park along Skyline Drive. A helicopter applied DDT at the rate of one pound per acre on 1045 acres in July. Satisfactory reduction was achieved. Heaviest infestations in West Virginia were in southwestern counties. Webworm infestations in Kentucky were common and heavy.

MISCELLANEOUS INSECTS

A number of miscellaneous forest insect pests were reported by the various states. Most of these are of minor concern at this time, but do constitute a potential threat to our forest resources.

Rhode Island

In Rhode Island the larch sawfly (Pristiphora erichsonii), larch casebearer (Coleophora laricella), Orange-striped oakworm (Anisota senatoria), and the white pine cone beetle (Conophthorus coniperda) were reported as present, but of minor concern. The pales weevil (Hylobius pales) has increased in abundance on the Scituate watershed, while a pyralid (Dioryctria sp.) has caused serious damage to red pine throughout the State.

New York

The yellow-headed spruce sawfly (Pikonema alaskensis) has increased in intensity in St. Lawrence County, New York, while the periodical cicada (Magicicada septendecim) has remained static in the lower Hudson Valley.

Pennsylvania

Pennsylvania reported a number of minor forest pest problems which in combination with other factors (i.e. climatic) were responsible for a general decline in tree vigor in various locations in the State. Some of these insect problems were: a cynipid gall-maker on white oak, a cambium-miner, probably Phytobia (Agromyza) sp. on white ash, a pit-making oak scale (Asterolecanium minus) on chestnut oaks, and a leaf-roller complex on red and scarlet oaks. Virginia pine showed minor damage by a needle-sheath miner (Zelleria haimbachi), while the larch sawfly (Pristiphora erichsonii) continued its defoliation of larch stands.

| | |
|----------|---|
| Virginia | In northwestern Virginia in Shenandoah County a looper, (<u>Phigalia titea</u>) heavily defoliated 1,000 acres of chestnut oak, white oak and other hardwoods in the spring of 1962 on Short Mountain. Predators and parasites have markedly reduced the population, but whether defoliation can be expected again in 1963 has not yet been determined. |
| Kentucky | A leaf-mining weevil (<u>Prionomerus calceatus</u>) has created a new problem on yellow poplar in Kentucky. |

Various species of Dendroctonus were observed on the increase in various locations in the southern part of the Region.

STATUS OF FOREST DISEASES

HARDWOODS: DECLINES AND DIEBACKS

ASH DIEBACK (cause unknown)

| | |
|--|--|
| New Hampshire Vermont Massachusetts Connecticut New York Pennsylvania | Ash dieback has been observed as far east as the Laconia Lakes Region of New Hampshire and as far north as St. Johnsburg, Vermont. No decrease in the intensity of the condition has been reported. Although limited to local areas in Pennsylvania, ash dieback is an increasingly important disease because of the high value placed on ash. One report from Huntington County, Pennsylvania, estimates 85 percent of the ash affected. Salvage is underway in these seriously infected areas. An ash dieback survey will be accomplished this summer throughout the Northeast with the exception of New York which has already been surveyed. |
|--|--|

MAPLE DECLINE (cause unknown)

| | |
|---|--|
| Maine New Hampshire Vermont New York | The reports of roadside dying of hard maple in Maine, New Hampshire, Vermont and New York and recent observations of dieback of soft maple in the eastern and central portion of New York may indicate two distinct problems. Considering the general condition of hardwoods in New York this may be another indication of general hardwood decline throughout the region. Research on the sugar maple decline is being conducted at the College of Agriculture, Cornell University, Ithaca, New York. |
|---|--|

HARDWOODS: CANKERS

MAPLE CANKER (cause unknown)

Pennsylvania
West Virginia

This canker of red and sugar maple, although primarily a degrader, is believed to be intimately associated with maple decline in Pennsylvania. Sugarbush operators agree that severe cankering results in 10 percent or more reduction in syrup yield. Cankers apparently are initiated during the dormant season and are usually associated with stain and to a lesser degree decay. Because of the roughened appearance of severely cankered stems, this condition is also known as "rough bark".

Research on this problem is being conducted at Pennsylvania State University. The School of Forestry is studying the ecological aspects while the Department of Botany and Plant Pathology is pursuing the problem through dissection work, artificial defoliation and inoculation experiments.

YELLOWPOPLAR CANKER (Fusarium solani)

Virginia
West Virginia
Kentucky

A canker of yellowpoplar caused by Fusarium solani and recently described in the Journal of Forestry,^{1/} has been identified in the Northeast in the past season. The disease is probably widespread, infecting suppressed trees and vigorous trees during periods of stress. The present scattered distribution is expected to increase with the continued identification of the canker during the coming season.

BEECH SCALE - NECTRIA COMPLEX (Nectria coccinea)

Maine
New Hampshire
Vermont
Massachusetts
Connecticut
New York

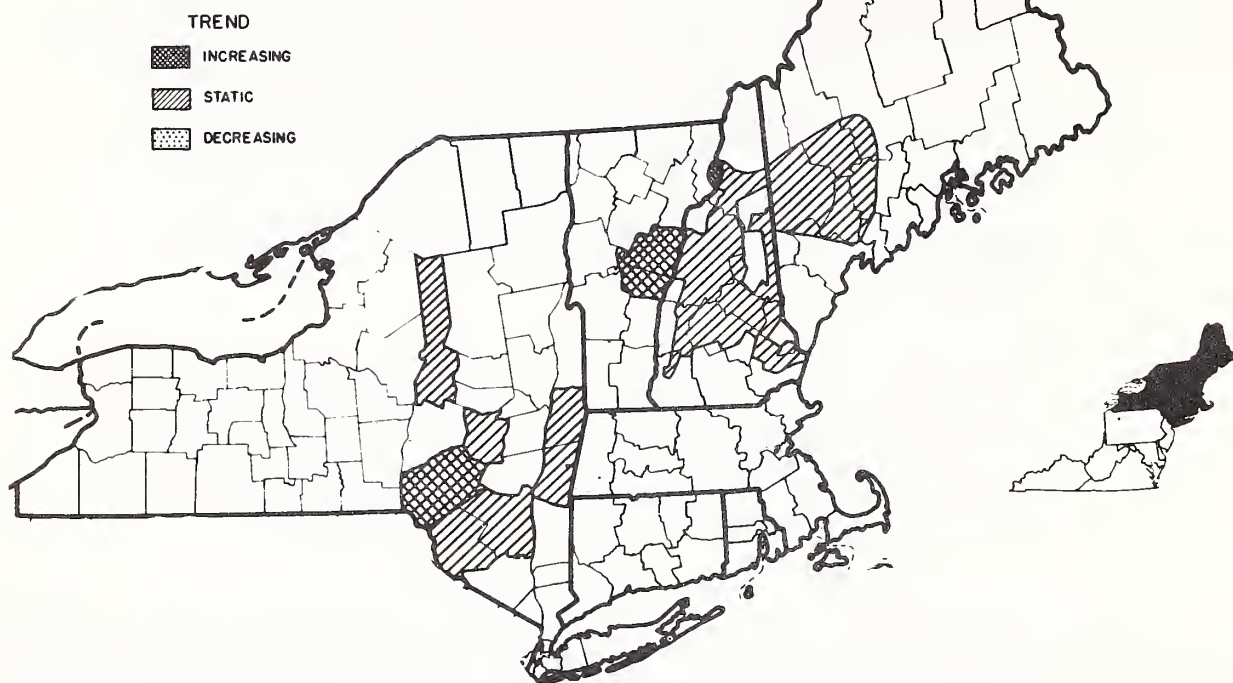
The beech scale-nectria complex continues to be a major pest problem in the northern part of the region. Heavy tree mortality and extensive salvage operations have greatly reduced scale nectria infestations in eastern Maine. The major activity of the insect-disease complex is now concentrated in the western counties. Population levels and degree of damage remains static in both the Maine and New Hampshire infestations. (Map XVI)

^{1/} Dochinger, L. S. and C. E. Selisker, 1962. Fusarium canker found on yellowpoplar. Journal of Forestry 60: 331-333.

MAP XVI

BEECH SCALE - NECTRIA COMPLEX

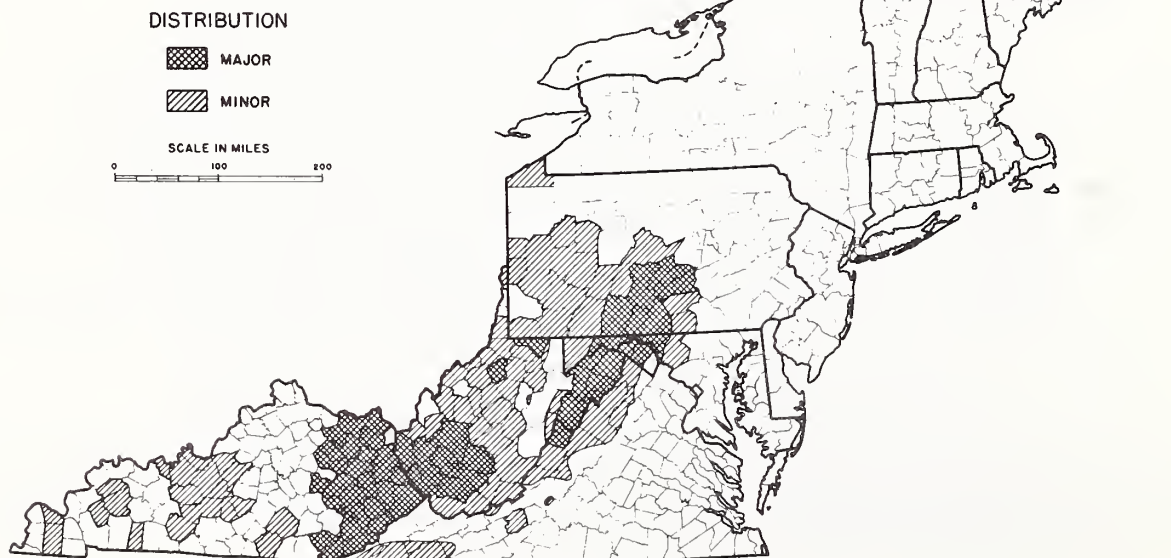
(CRYPTOCOCCUS FAGI - NECTRIA GALLIGENA VAR. FAGINATA)



MAP XVII

OAK WILT

(CERATOCYSTIS FAGACEARUM)



Salvage of heavily damaged old growth beech continues in the White Mountain National Forest. In Vermont an increase was observed in both the incidence of scale attack and nectria infection. Salvage of infested beech in eastern Essex County will be carried out in 1963.

An occasional scale infested beech has been observed in Massachusetts and Connecticut. The New York infestation continues to be active, especially in Delaware County where an increase in scale population was reported.

HARDWOODS: WILTS

OAK WILT (Ceratocystis fagacearum)

| | |
|------------------------------------|--|
| Post Control Appraisal Plots | The U. S. Forest Service, in cooperation with Pennsylvania, West Virginia and Kentucky, is attempting to find out which of the control techniques used by these states is most effective. This study was initiated in 1958. It is hoped that an answer will be forthcoming soon. These are the control methods as presently used by each state. (Map XVII) |
| Pennsylvania | Treatment consists of felling the infected tree and all others in the same subgenus within a 50-foot radius of the infected individual. Ammate is then applied to the resulting stump surfaces. |
| Maryland | The Maryland treatment is similar to that of Pennsylvania except that Pentachlorophenol is applied to the stumps, logs and tops. Oak wilt, for the first time this year, was observed on the east side of Catoclin Mountain, Frederick County. |
| Virginia | Treatment consists of a deep girdle and low frill. The herbicide 2,4,5-T in oil is introduced into the low frill. All oaks in the same subgenus within a 50-foot radius of the infected tree are treated similarly on non-federal lands. On federal lands only the infected tree is treated. Infection to date has not been reported east of the Blue Ridge. |
| West Virginia | Treatment consists of deep girdling the infected tree and bark peeling below the girdle to the root collar. Only the infected tree is treated. |

Kentucky

The Kentucky treatment consists of felling the diseased tree and spraying the stump with 2,4,5-T. Bark surfaces of the bole and branches to a 1-inch diameter are then sprayed with a mixture of Benzene Hexachloride and DDT. Only the infected tree is treated.

CONIFERS: ROOT DISEASES

ANNOSUS ROOT ROT (Fomes annosus)

Region 7

The generally dry conditions throughout the northeast during the 1962 growing season greatly inhibited sporophore production. However, this does not imply that the fungus was inhibited in its spread by root graft. A recent inspection of a heavily infected red pine plantation in south central Massachusetts revealed continued killing.

Many reports of this root rot were received during the past season. This, undoubtedly, resulted from an increased awareness by observers coupled with an increase in forest activities favoring infection over the past few years (i.e., increased intermediate thinning of coniferous plantations).

It is significant that several reports of damage in natural stands were received this year (Virginia, West Virginia and Kentucky). Heretofore, damage was supposedly confined mainly to plantations. With this in mind, natural stands of high value should be treated as plantations in annosus root rot prevention.

LITTLELEAF (complex - Phytophthora cinnamomi)

Kentucky

Symptoms of littleleaf of shortleaf pine attracted the attention of pathologists and soil scientists in southeast Kentucky. Together, they identified soils on areas where symptomatic trees were growing. These soils were assayed for the presence of Phytophthora cinnamomi, the root pathogen associated with the disease. The pathogen has been successfully isolated from the following soils in southeast Kentucky to date: DeKalb Fine sandy loam, Jefferson loam, Wellston silt loam. Because less than half of the sampled areas yielded the fungus, the possibility that other factors may be involved is being considered.

CONIFERS: STEM RUSTS

WHITE PINE BLISTER RUST (Cronartium ribicola)

Region 7

Drought conditions throughout most of the Region in 1962 were unfavorable for rust infection build up on either ribes or white pine. Consequently, infection was at a very low level. However, in areas mostly outside the blister rust control zone which have an extremely high hazard rating, considerable infection on ribes and white pine was observed. An exception in the blister rust control area was noted in Garrett County, Maryland, where ribes were heavily infected and new infections were found on recently planted unprotected white pine plantations. In Berkshire County, Massachusetts, heavy aecia production was noted and was quite common in western Massachusetts by mid-April.

CONIFERS: FOLIAGE DISEASES

WHITE PINE NEEDLE BLIGHT (cause unknown) (Emergence tipburn and Post-emergence tipburn)

Region 7

All age classes may be affected with occasional mortality. Studies of this condition are underway at the University of Massachusetts. White pine, throughout its range, is affected by this blight condition. From research now being conducted at the Southeastern Forest Experiment Station, Asheville, North Carolina, the white pine needle blight appears to result from an atmospheric oxidant.

